

Claims

What is claimed is:

1. Thermal barrier coating method which forms thermal barrier coating by spray coating over surface of component where cooling holes are made, characterized by forming thermal barrier coating by spray coating after inserting masking pins, which do not protrude above surface of the said component, into the said cooling holes.

2. Thermal barrier coating method which forms thermal barrier coating by spray coating over surface of component where cooling holes are made, characterized by including masking process where masking pins which do not protrude above the said component are inserted into the said cooling holes; blasting treatment process where surface of the said component is blasted and coarsened; and thermal barrier coating forming process where thermal barrier coating is formed by spray coating over surface of coarsened component.

3. Thermal barrier coating method which forms thermal barrier coating by spray coating over surface of component where cooling holes are made, characterized by forming thermal barrier coating by spray coating after masking pins which protrude above surface of the said component for amount equal to thickness of thermal barrier coating are inserted into the said cooling holes.

4. Thermal barrier coating method which forms thermal barrier coating by spray coating over surface of component where cooling holes are made, characterized by including masking process where masking pins protruding above surface of the said component for amount equal to thickness of thermal barrier coating are inserted into the said cooling holes;

blasting treatment process where surface of the said component is blasted and coarsened; thermal barrier coating forming process where thermal barrier coating is formed by spray coating over surface of coarsened component; and chamfering process where thermal barrier coating around the said cooling holes is chamfered.

5. Thermal barrier coating method which forms thermal barrier coating by spray coating over surface of component where cooling holes are made, in which after masking pins protruding above surface of the said component are inserted into the said cooling holes, thermal barrier coating is formed by spray coating, and which is characterized by making protrusion amount be equal to or less than thickness of thermal barrier coating after masking pins are shrunk due to heat during spray coating.

6. Thermal barrier coating method which forms thermal barrier coating by spray coating over surface of component where cooling holes are made, characterized by including masking process where masking pins protruding above surface of the said component are inserted into the said cooling holes after they are shrunk due to heat by spray coating in a manner that protruding amount is equal to or less than thickness of thermal barrier coating; blasting treatment process where surface of the said component is blasted and coarsened; thermal barrier coating forming process where thermal barrier coating is formed by spray coating over surface of coarsened component; and chamfering process where thermal barrier coating around the said cooling holes is chamfered.

7. Any of thermal barrier coating methods described as Claim 1 through Claim 6 and the said cooling holes are not drilled through or drilled through.

8. Any of thermal barrier coating methods described as Claim 1 through Claim 6 and the said component is combustor transition piece of gas turbine and the said cooling holes are made in internal periphery surface of wall constituting the said combustor transition piece.

9. Any of thermal barrier coating methods described as Claim 1 through Claim 6 and the said masking pin is composed of material having elasticity to be superior in blasting resistance, heat resistance to endure heat caused by spray coating, stripping easiness to be entirely taken out from the said cooling hole after thermal barrier coating is formed, superior adherence and wetness to prevent thermal barrier coating material from accumulation.

10. Any of thermal barrier coating methods described as Claim 1 through Claim 6 and the said masking pin is composed of elastic body of silicone rubber.

11. Any of thermal barrier coating methods described as Claim 1 through Claim 6 and the said masking pin is formed by drying and hardening elastic body of liquid silicone rubber injected into the said cooling hole.

12. Any of thermal barrier coating methods described as Claim 1 through Claim 6 and the said masking pin is made by punching out sheets of elastic body of silicone rubber or by forming with a metal mold.

13. Masking pin used for any of thermal barrier methods described as Claim 1 through Claim 6:

The said masking pin is composed of material having elasticity to be superior in blasting resistance, heat resistance to endure heat caused by

spray coating, stripping easiness to be entirely taken out from the said cooling hole after thermal barrier coating is formed, superior adherence and wetness to prevent thermal barrier coating material from accumulation.

14. Masking pin used for any of thermal barrier coating methods described as Claim 1 through Claim 6:

The said masking pin is formed by drying and hardening elastic body of liquid silicone rubber injected into the said cooling hole.

15. Masking pin used for any of thermal barrier coating methods described as Claim 1 through Claim 6:

The said masking pin is formed by punching out sheets of elastic body of silicone rubber or by forming with a metal mold.

16. Masking pin used for any of thermal barrier coating methods described as Claim 1 through Claim 6:

Outside diameter of the said masking pin is enlarged to be approximately 10 per cent larger than diameter of the said cooling hole.

17. Combustor transition piece characterized by thermal barrier coating which is formed on its internal periphery surface by way of any of thermal barrier coating methods described as Claim 1 through Claim 6.